



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/553,990	04/20/2000	Youhao Xu	456962000200	5903

25226 7590 08/03/2005

MORRISON & FOERSTER LLP
755 PAGE MILL RD
PALO ALTO, CA 94304-1018

EXAMINER

LEUNG, JENNIFER A

ART UNIT	PAPER NUMBER
----------	--------------

1764

DATE MAILED: 08/03/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

**Advisory Action
Before the Filing of an Appeal Brief**

Application No.

09/553,990

Applicant(s)

XU ET AL.

Examiner

Jennifer A. Leung

Art Unit

1764

--The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

THE REPLY FILED 13 July 2005 FAILS TO PLACE THIS APPLICATION IN CONDITION FOR ALLOWANCE.

1. ☒ The reply was filed after a final rejection, but prior to or on the same day as filing a Notice of Appeal. To avoid abandonment of this application, applicant must timely file one of the following replies: (1) an amendment, affidavit, or other evidence, which places the application in condition for allowance; (2) a Notice of Appeal (with appeal fee) in compliance with 37 CFR 41.31; or (3) a Request for Continued Examination (RCE) in compliance with 37 CFR 1.114. The reply must be filed within one of the following time periods:

- a) ☐ The period for reply expires _____ months from the mailing date of the final rejection.
b) ☒ The period for reply expires on: (1) the mailing date of this Advisory Action, or (2) the date set forth in the final rejection, whichever is later. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of the final rejection.

Examiner Note: If box 1 is checked, check either box (a) or (b). ONLY CHECK BOX (b) WHEN THE FIRST REPLY WAS FILED WITHIN TWO MONTHS OF THE FINAL REJECTION. See MPEP 706.07(f).

Extensions of time may be obtained under 37 CFR 1.136(a). The date on which the petition under 37 CFR 1.136(a) and the appropriate extension fee have been filed is the date for purposes of determining the period of extension and the corresponding amount of the fee. The appropriate extension fee under 37 CFR 1.17(a) is calculated from: (1) the expiration date of the shortened statutory period for reply originally set in the final Office action; or (2) as set forth in (b) above, if checked. Any reply received by the Office later than three months after the mailing date of the final rejection, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

NOTICE OF APPEAL

2. ☐ The Notice of Appeal was filed on _____. A brief in compliance with 37 CFR 41.37 must be filed within two months of the date of filing the Notice of Appeal (37 CFR 41.37(a)), or any extension thereof (37 CFR 41.37(e)), to avoid dismissal of the appeal. Since a Notice of Appeal has been filed, any reply must be filed within the time period set forth in 37 CFR 41.37(a).

AMENDMENTS

3. ☒ The proposed amendment(s) filed after a final rejection, but prior to the date of filing a brief, will not be entered because
(a) ☒ They raise new issues that would require further consideration and/or search (see NOTE below);
(b) ☐ They raise the issue of new matter (see NOTE below);
(c) ☐ They are not deemed to place the application in better form for appeal by materially reducing or simplifying the issues for appeal; and/or
(d) ☐ They present additional claims without canceling a corresponding number of finally rejected claims.

NOTE: see Continuation Sheet. (See 37 CFR 1.116 and 41.33(a)).

4. ☐ The amendments are not in compliance with 37 CFR 1.121. See attached Notice of Non-Compliant Amendment (PTOL-324).
5. ☐ Applicant's reply has overcome the following rejection(s): _____.
6. ☐ Newly proposed or amended claim(s) _____ would be allowable if submitted in a separate, timely filed amendment canceling the non-allowable claim(s).
7. ☒ For purposes of appeal, the proposed amendment(s): a) ☒ will not be entered, or b) ☐ will be entered and an explanation of how the new or amended claims would be rejected is provided below or appended.
The status of the claim(s) is (or will be) as follows:
Claim(s) allowed: _____.
Claim(s) objected to: _____.
Claim(s) rejected: 1-3,6-11,14-27,29-35,38-40 and 49-58.
Claim(s) withdrawn from consideration: _____.

AFFIDAVIT OR OTHER EVIDENCE

8. ☐ The affidavit or other evidence filed after a final action, but before or on the date of filing a Notice of Appeal will not be entered because applicant failed to provide a showing of good and sufficient reasons why the affidavit or other evidence is necessary and was not earlier presented. See 37 CFR 1.116(e).
9. ☐ The affidavit or other evidence filed after the date of filing a Notice of Appeal, but prior to the date of filing a brief, will not be entered because the affidavit or other evidence failed to overcome all rejections under appeal and/or appellant fails to provide a showing a good and sufficient reasons why it is necessary and was not earlier presented. See 37 CFR 41.33(d)(1).
10. ☐ The affidavit or other evidence is entered. An explanation of the status of the claims after entry is below or attached.

REQUEST FOR RECONSIDERATION/OTHER

11. ☒ The request for reconsideration has been considered but does NOT place the application in condition for allowance because: see Continuation Sheet.
12. ☐ Note the attached Information Disclosure Statement(s). (PTO/SB/08 or PTO-1449) Paper No(s). _____.
13. ☐ Other: _____.

Hien Tran
**HIEN TRAN
PRIMARY EXAMINER**

Art Unit: 1764

Continuation of 3. NOTE:

The newly added limitation to claim 17, which recites "the diameter of the first reaction zone is equal to or greater than that of the prelift zone", changes the scope of claim 17, and therefore necessitates further consideration and/or search.

Continuation of 11.

The request for reconsideration has been considered, but it does NOT place the application in condition for allowance for the same reasons set forth in the Final Office Action.

In addition, the Examiner responds to Applicant's following argument(s):

Beginning on page 24 (line 13) of the response, Applicant argues,

"When the starting material oil is fed via feed inlet means 5... the linear velocity at the outlet end of the so-called first reaction zone... *will not exceed the maximum linear velocity of 31 m/s*. Even if the linear velocity at the outlet of the so-called first reaction zone is 31 m/s, *the linear velocity of the second reaction zone is 13.8 m/s when the ratio of the second reaction zone diameter to the first reaction zone diameter is 1.5*, i.e., the oil gas contacts the catalyst for 1.78 seconds. It would be apparent to a person of skill in the art that the maximum linear velocity of the prelift section... is about 5 m/s, i.e., the linear velocity at the inlet of the first reaction zone is 5 m/s, the linear velocity at the outlet of the first reaction zone is 31 m/s, and the average linear velocity of the first reaction zone is 14.4 m/s, so that the oil gas contacts the catalyst for 1.02 seconds in the first reaction zone, the oil gas contacts the catalyst for 2.8 seconds altogether in the first and second reaction zones. *These values were calculated with the proviso that the linear velocity at the outlet of the first reaction zone is 31 m/s*. If the linear velocity at the outlet of the first reaction zone is less than 31 m/s, the oil gas will contact the catalyst for a total of more than 3.0 seconds in the first and second reaction zones. The reactor taught by Kmecak et al., however, requires that the oil gas contacts the catalyst for 3 seconds or less in the

reactor... If the ratio of the second reaction zone diameter to the first reaction zone diameter exceeds 1.5, the linear velocity of the second reaction zone will be lower, so that the oil gas has to contact the catalyst for a longer period of time. Thus, it is not possible for the ratio of the second reaction zone diameter to the first reaction zone diameter to exceed 1.5:1, let alone 3:1 as estimated by the Examiner..."

Firstly, it is unclear as to how applicant has arrived at the stated values because the calculations used to obtain the stated values has not been provided. It appears that Applicant has based his calculations on the assumption that the maximum linear velocity in the first reaction zone cannot exceed 31 m/s, taken from the disclosure of Kmecak et al. (page 49, lines 7-23) which states,

"... it is contemplated employing a riser reaction zone of a vertical length of about 49 meters... through which a catalyst suspension is passed at a velocity in the range of 18 to 31 meters/sec. In a specific embodiment employing a velocity of about 24.5 meters/sec... the suspension traversed the riser in about 2 seconds."

However, please note that the velocity stated by Kmecak et al. is the linear velocity through *the entire riser reactor*, and not a maximum linear velocity achieved within a particular zone of the riser reactor, as argued by applicants. This is supported by the example of employing a velocity of about 24.5 meters/sec to achieve a suspension that traverses the riser in about 2 seconds (i.e., a linear velocity of 24.5 meters/sec multiplied by a residence time of 2 seconds equals a riser reactor of 49 meters). Therefore, in the case of a linear velocity of 31 meters/sec through *the entire riser reactor*, the linear velocity within the first reaction zone would necessarily be greater than 31 meters/sec (i.e., with the linear velocity within the second reaction zone being less than 31 meters/sec due to the enlarged diameter) in order to average out to a linear velocity through *the entire riser reactor* of 31 meters/sec.

Art Unit: 1764

Additionally, there are numerous other variables one must take into account in determining the diameter and height calculations. For example, the phenomenon of “slippage” between the catalyst and hydrocarbon vapor in the riser would need to be considered in making proper diameter and height calculations (see Kmecak et al., page 21, lines 12-20).

Beginning on page 25 (last paragraph), Applicant further argues,

“The reactor taught by Williams et al. is structurally different from the presently claimed riser reactors... The combination of Kmecak et al. and Williams et al. does not teach all of the elements of the claims... The combination... does not teach a riser reactor comprising a prelift zone, a first reaction zone, and a second reaction zone, wherein the diameter of the second reaction zone to the diameter of the first reaction zone is about 1.5:1 to about 5:1... The Examiner states that the precise dimensions of the respective zones of the riser reactor would have been considered a result effective variable by a person of ordinary skill in the art, in view of Williams. However, since... Williams does not teach a reactor with the same configuration or reaction zones as the presently claimed invention this reference would not have provided motivation to vary the diameters of the reaction zones in a device configured as in the instant invention.”

The Examiner respectfully disagrees. The test for obviousness is not whether the features of a secondary reference may be bodily incorporated into the structure of the primary reference; nor is it that the claimed invention must be expressly suggested in any one or all of the references. Rather, the test is what the combined teachings of the references would have suggested to those of ordinary skill in the art. *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981). The examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge

Art Unit: 1764

generally available to one of ordinary skill in the art. *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988); *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). In this case, the Williams et al. reference was merely provided to illustrate that it is well known in the art to vary the length and diameter of the various sections of riser reactors in order to maintain a desired reaction time within a particular section of a riser reactor. The structural features of the riser reactor in Williams et al. were not meant to be bodily incorporated into the riser reactor of the Kmecak et al. reference.

Hien Tran

**HIEN TRAN
PRIMARY EXAMINER**

Jennifer A. Leung
July 29, 2005 *JAL*